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DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

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Via Electronic Mail to aapilakowski@tva.gov
Attn: Ashley Pilakowski, NEPA Specialist
Tennessee Valley Authority
400 West Summit Hill Drive, WT 11B
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Dear Ms. Pilakowski:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority (TVA) *Potential Retirement of Bull Run Fossil (BRF) Plant Draft Environmental Assessment* (EA) which assesses the site-specific impacts of the potential retirement of BRF in Anderson County, Tennessee. Given the energy environment projected over the next several years, where zero to declining demand combines with higher load swings and calls for more renewable energy resources, TVA must continuously evaluate all generating assets to ensure portfolio flexibility and fiscal responsibility to the people of the Valley.[1] Assets that have relatively high projected future maintenance cost and environmental compliance expenditures, high forced outage rates and poor generation portfolio fit, are now the focus of more detailed study for potential retirement. TVA's BRF falls into this category of assets.

Actions considered in detail within the Draft EA include:

> **Alternative A – No Action Alternative**. Under the No Action Alternative, the BRF unit would not be retired and would continue to be part of TVA's generation portfolio. Under this alternative, as well as under Alternative B, TVA would implement several actions related to coal combustion residuals (CCR) management, including various impoundment closures.[2] In order to continue operating BRF, TVA would

[1] Comprehensive analysis, including the NEPA evaluation for the potential retirement of BRF, will inform the TVA Board as TVA plans its future power supply.

[2] Table 2-1 and Section 2.1.1 describe the Alternative specific CCR actions that TVA will take. TVA will take the following actions relating to CCR under both scenarios:

- **Environmental Investigation Plan (EIP).** Per TDEC Consent Order No. OGC15-0177, TVA is developing an EIP for BRF to set forth a "process for the investigation, assessment, and remediation of unacceptable risks" at BRF coal ash disposal sites. This includes gathering existing CCR data, conducting sampling, developing analysis plans, and revising the EIP to address TDEC and public comments.
- **Bottom Ash Complex Final Closure.** TVA's goal of converting all wet fly ash, bottom ash, and gypsum operations to dry storage at its coal plants would require closure of the Bottom Ash Complex at BRF. Associated actions include dewatering impoundments, rerouting storm water and wastewater conveyances, grading and reconfiguring the stored bottom ash, transferring 250,000 cubic yards of borrow material to grade and cover the site, and installing protective covers (TVA 2016b).
- **Gypsum Impoundment Final Closure.** TVA's goal of converting all wet fly ash, bottom ash, and gypsum operations to dry storage at its coal plants would require closure of the Gypsum Impoundment at BRF (TVA 2016b).
- **Partial Fly Ash Impoundment Closure.** TVA's goal of converting all wet fly ash, bottom ash, and gypsum operations to dry storage at its coal plants would require repurposing of a portion of the Fly Ash Impoundment and Stilling Pond at BRF for use as a non-CCR

construct a new CCR landfill over the next 6 years.[3] TVA would also implement projects associated with the waste water treatment facility, bottom ash overflow optimization and underflow piping, sulfite analyzers, and outage wash collection system.[4]

Alternative B – Potential Retirement of Bull Run Fossil Plant.[5] Under Alternative B, TVA would retire BRF in 2023. At that time, TVA would cease most plant operations and reduce plant staff. In order to minimize environmental and safety risks and comply with applicable laws and regulations, TVA would implement the following actions.

1. Decommissioning is the performance of activities required to ready a facility for deactivation. Work performed includes removal of equipment, components, and parts that can be used at other sites, draining of oil/fluids from equipment, removal of coal and ash from boilers and other equipment, removal of hazardous materials and potential waste like materials, removal of polychlorinated biphenyls (PCBs) equipment, removal of furniture/furnishings, removal of information technology assets, and removal of plant records. Key activities include:

    - Tagging out all unit or plant equipment except service water, lighting, etc.
    - Emptying and cleaning hoppers, bins, bunkers, etc.
    - Opening all equipment electrical breakers not in use
    - Draining oil and fluids
    - Salvaging and storing all useable equipment, components, materials, spare parts, office products etc. and relocating them, as practical
    - Salvaging and storing all key plant records.

2. Deactivation is shutting down of power and energized systems as appropriate as well as isolating and/or severing power, water and piping to the plant to provide a cold, dark and dry structure. Work includes removing power and services, installing bulkheads, and sealing tunnels. Activities may also include rerouting of power and services as required for any facilities that would remain operational. Key activities include:

    - Performing electrical and mechanical isolation of systems, components and areas
    - Installing bulkheads and/or fill tunnels
    - Providing alternate power and services (sump pumps, Federal Aviation Administration (FAA) stack lighting, etc.)

Process Water Basin. Associated actions include temporarily covering 20 acres of the Fly Ash Impoundment, closing the remaining 13 acres, and repurposing the closed portion as a Process Water Basin for BRF. The Stilling Pond would be closed-by-removal and repurposed as a separate Process Water Basin. These basins would only manage storm water and non-CCR wastewater from BRF facilities (TVA 2017a; TVA 2018).

- **Process Water Basins.** TVA's goal of converting all wet fly ash, bottom ash, and gypsum operations to dry storage at its coal plants would require closure of the Process Water Basins at BRF as described under the Partial Fly Ash Impoundment Closure (TVA 2017a; TVA 2018).

[3] The 120-acre landfill would be located about 0.4 miles east of BRF and would provide approximately 15 years of CCR disposal capacity. Associated actions include the construction of a haul road, perimeter roads, and sediment ponds. The construction and operation of the new landfill, along with its potential environmental impacts, are described in detail in TVA 2016a.

[4] Details regarding these projects, including analyses of their potential environmental impacts, have not been finalized. The projects discussed in this paragraph would not be completed if the decision is made to retire BRF. If a decision is made to continue operating BRF and additional details are available, the analyses of these projects would be completed.

[5] Under Alternative B, TVA would implement several CCR-related actions listed in Table 2.a and described in Section 2.1.1. If BRF were retired in 2023, the Stilling Pond Closure would be completed over the next 6 years. If the completion of the TDEC Consent Order results in the need for TVA to close its existing impoundments at BRF by removal, then the landfill, haul road and bridge may still need to be constructed.

3. Limited decontamination involves removing select regulated materials in a safe and practical manner in such a way that the plant is left in a status that does not present a hazard or risk to the environment or personnel. Limited decontamination activities at BRF includes abatement and disposal of regulated materials, which include but are not limited to PCB equipment, asbestos, hazardous waste, solid waste, products, etc. Key activities include:

    - Removal and proper disposal of regulated materials as practical
    - Periodic materials condition monitoring.
    - Periodic waste removal as materials deteriorate over time.

TDEC has reviewed the Draft EA and has the following comments regarding the proposed action and its alternative:

Cultural and Natural Resources

TDEC believes the Draft EA adequately addresses potential impacts to cultural and natural resources within the proposed project area.[6]

Energy Programs

TDEC concurs that when considering a number of factors, including but not limited to the Valley's flat-to-declining load projections, cheaper fuel options, and the cost of capital improvements that would be required to continue site operations that are environmentally compliant, retirement of BRF seems like a prudent alternative. From an energy assurance standpoint, TDEC does not have any concerns with TVA's ability to continue to provide electricity – both baseload and surge capacity — while fulfilling its statutory mission to provide reliable power at the lowest system cost.

TDEC recommends that consideration be given to using alternative-fueled and/or electric-powered equipment where possible as noise levels and air emissions would be lower than traditional gas-powered models. For instance, electric-powered lawn equipment is as much as fifty percent (50 %) quieter than traditional gas-operated models. Electric-powered Lawn equipment has zero air emissions onsite, reduces petroleum-fuel purchases, and eliminates used oil waste.

Air Resources

The Draft EA discusses developing a plan for managing asbestos once demolition activities are determined. However, there is no mention of analysis or research associated with proactively identifying the presence of asbestos containing material. TDEC recommends that Final EA include discussion on how TVA will identify asbestos containing material in advance of planning for the management of asbestos removal.

TDEC recommends that the National Ambient Air Quality Standards (NAAQS) data included in Table 3-1 (provided on page 14) be updated to include only the current NAAQS value for lead, which is 0.15 $\mu g/m^3$ assessed on a rolling 3-month averaging time.[7]

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[6] This is a state-level review only and cannot be substituted for a federal agency Section 106 review/response. Additionally, a court order from Chancery Court must be obtained prior to the removal of any human graves. If human remains are encountered or accidentally uncovered by earthmoving activities, all activity within the immediate area must cease. The county coroner or medical examiner, a local law enforcement agency, and the state archaeologist's office should be notified at once (Tennessee Code Annotated 11-6-107d).

[7] The quarterly standard of 1.5 $\mu g/m^3$ was abolished in Tennessee by EPA when the new standard became final. The old standard is no longer in force and is not used for designation purposes.

The ambient air quality data presented in Table 3-2 (provided on page 15), includes PM2.5 data from a site in Chattanooga (47-093-0028, the 911 Siskin Drive site located in Hamilton County), which is relatively far away from BRF. The ozone data presented appears to be from the Freel's Bend site (47-001-0101, located in Anderson County), which is reasonable given that the site is in close proximity to BRF which is also located in Anderson County. There are other PM2.5 monitoring sites located in Blount County, Knox Loudon and Roane counties that are all considerably closer to BRF than the Chattanooga site selected. TDEC recommends TVA consider including monitoring sites with closer proximity to BRF in the analysis provided by the Final EA.

TDEC recommends that SO2 monitoring data collected at the Freel's Bend site be included in the Final EA. SO2 monitoring occurs at the Freel's Bend site to (1) measure ambient SO2 emissions from the area surrounding BRF and (2) meet the population weighted emissions index (PWEI) monitoring requirements for SO2 associated with the Knoxville core-based statistical area (CBSA) population.[8] TDEC recommends that TVA include these considerations in the Final EA.

Remediation

Based on review of the Draft EA, TDEC does not anticipate direct impacts to biological monitoring for the Department of Energy's Oak Ridge Reservation (ORR) or potential impacts on heavy metals and radiological monitoring. In the event of an unforeseen breech, poor erosion control, or disturbance of CCR materials, as well as the associated sediments and water, there could potentially be a detectable increase in metals such as arsenic, mercury, chromium, etc. downstream in the Clinch River at the ORR. Changes in pH associated with CCR could also cause the release of some metals. The potential release of uranium and its daughter products from CCR could be detected at low levels with direct monitoring for uranium and with gross alpha/beta monitoring in the Clinch River at the ORR. TDEC recommends that TVA include a notification protocol in the Final EA to alert ORR in the event of an unplanned release of material.

Solid Waste

In the event that TVA moves forward with Alternative B, retirement of BRF, and construction of an onsite landfill is necessitated to support closure-by-removal, previous analysis associated with the proposed landfill will not be reflective of this scenario. The original NEPA document for the proposed onsite landfill (Site J) stated an objective/need of twenty years of disposal capacity for ongoing production of CCR waste.[9] An evaluation of environmental onsite impacts were weighed against cost and impacts for offsite disposal at Chestnut Ridge landfill. It is reasonable to assume that the quantity of waste resulting from closure-by-removal would be less than the quantity from twenty years of waste generated by ongoing operations. Therefore, the onsite impacts for the original NEPA document would not be appropriate. A landfill design for the quantity waste resulting from closure-by removal would be very different from the currently proposed landfill design. TDEC recommends that TVA state if additional NEPA review would be required for the scenario where TVA is required to closure-by-removal any of the CCR units at BRF in the Final EA.

[8] The PWEI is an EPA requirement that provides the number of SO2 monitors that are required to be operated based on an index number calculated using the SO2 emissions density in tons for the CBSA and the population of the CBSA. As the index rises the number of monitoring sites goes up. The Bull Run TVA facility has emissions that were great enough based on the Knoxville population (CBSA) to trigger the need for a single monitor that was located at our Freels Bend site in Anderson County.

[9] The original Environmental Impact Statement for the proposed onsite landfill can be found at, https://www.tva.gov/Environment/Environmental-Stewardship/Environmental-Reviews/Bull-Run-Fossil-Plant-Landfill-Management-of-Coal-Combustion-Residuals.

Water Resources

Based on review of the Draft EA, the proposed landfill construction will require a hydrologic determination study by a certified hydrologic professional to identify all of the aquatic resources within the project limits of disturbance to determine the impact to water resources. The construction of the landfill may require an Aquatic Resources Alteration Permit (ARAP), an National Pollutant Discharge Elimination System (NPDES) storm water construction permit, and/or an NPDES discharge permit. TDEC recommends the Final EA include these details.

Closure of BRF, as TVA notes, would require the current NPDES Discharge Permit (TN0005410) to remain as closure activities continue. However, this permit would require modification as the discharge to outfall 002 from large volumes of cooling water cease. Modifications to the Multi-Sector General Stormwater Permit's Storm Water Pollution Prevention Plan (SWPPP) would need to occur to reflect the closure changes as well. Depending on the specific closure activities chosen, an ARAP could be necessary if there will be any alterations to wet weather conveyances, streams, wetlands, or other aquatic resources. TDEC recommends TVA include these considerations in the Final EA.

It should be noted that TVA may choose to pursue CCR impoundment closure-in-place at any of its Fossil Plants. However, should TVA begin CCR surface impoundment closures at any of its Tennessee Fossil Plants and TDEC subsequently determines based on soil, surface water, ground water and/or geologic instability that closure in place is not protective of public health and/or the environment, then TDEC shall, in accordance with the Commissioner's Order, require TVA to commence appropriate corrective action including removal of CCR surface impoundments where TVA has begun or completed closure-in-place. Further, TVA is on notice that Tennessee Code Annotated Section 68-211-106(j) may require a permit or other approval from TDEC for the disposal or use of coal ash.

TDEC appreciates the opportunity to comment on this Draft EA. Please note that these comments are not indicative of approval or disapproval of the proposed action or its alternatives, nor should they be interpreted as an indication regarding future permitting decisions by TDEC. Please contact me should you have any questions regarding these comments.

Sincerely,

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